

ABSTRACT OF THE INVENTION

A method for mixed-mode execution in object-oriented programs is disclosed whereby certain portions of source code can be executed by a higher-level mode of execution having access to the program at its highest level of abstraction, while other portions can be executed by a lower-level mode of execution. The invention described can be applied to any object-oriented environment where the higher-level mode of execution has components that are executed by the lower-level mode of execution and where new objects can be added to a running program at the lower-level mode of execution. In a presently preferred embodiment of the present invention, a source code interpreter operates directly on portions of Java source code where detailed information about the program is required (such as debugging information, profiling information or coverage information) while a virtual machine executes compiled byte code at all other times. Interactions between the source code interpreter and the virtual machine are also described in accessing/updating of memory in the virtual machine by the source code interpreter, and transfer of control between the source code interpreter and the virtual machine.